California Regional Water Quality Control Board
North Coast Region

MONITORING AND REPORTING PROGRAM NO. R1-2001-##*

FOR

CITY OF FORTUNA
WASTEWATER TREATMENT FACILITY

Humboldt County

WASTEWATER MONITORING

Composite samples may be taken by an automatic sampling device approved by the Regional Water Board Executive Officer (Executive Officer) or by grab samples. In compositing grab samples, the sampling interval shall not exceed one hour. The following shall constitute the wastewater-monitoring program.

Influent Monitoring

Constituent	Unit	Type of Sample	Frequency
BOD (20°C, 5-day)	mg/l	8-hour composite	weekly
Suspended Solids	mg/l	8-hour composite	weekly

Effluent Monitoring (SN 001 and SN 002)

Constituent	Unit	Type of Sample	Frequency
BOD (20°C, 5-day)	mg/l	8-hour composite	weekly
Suspended Solids	mg/l	8-hour composite	weekly
Settleable Solids	ml/l	8-hour composite	weekly
Coliform Organisms (Total)	MPN/100ml	grab	weekly
Chlorine Residual (before and after dechlorination)	mg/l	grab	daily
pH	----	grab	weekly
Daily Flow	gpd	----	continuous

RECEIVING WATER MONITORING

Samples shall be collected in an ambient background location upstream of the discharge and downstream in the vicinity of the discharge. Samples shall be collected monthly and shall be analyzed for pH and dissolved oxygen.

Total daily flow monitoring of receiving waters shall be conducted when wastewater effluent is being discharged to the Eel River and/or to Strongs Creek. The flow in Eel River shall be that flow measured at the United States Geological Survey (USGS) gauging Station at Fernbridge.

ACUTE TOXICITY MONITORING

The presence of acute toxicity in the effluent (SN 001) shall be determined by conducting 96-hour static or static renewal tests using rainbow trout *Oncorhynchus mykiss* as the test species in accordance with wastewater testing method specified in EPA 600/4-90/027F, 4th edition or subsequent editions. An 8-hour composite sample of effluent shall be collected four times each year, at equal time intervals, during the winter discharge period and when discharge to the Eel River is occurring.

CHRONIC TOXICITY MONITORING

1. Chronic Toxicity Monitoring Requirements

   a. Sampling. The permittee shall collect 8-hour composite or 24-hour composite samples of effluent (SN 001) for critical life stage toxicity testing as indicated below. For toxicity tests requiring renewals, 8-hour or 24-hour composite samples collected on consecutive days are required.

   b. Test Species: Chronic toxicity shall be monitored by using critical life stage test(s) and the most sensitive test specie(s) identified by screening phase testing in General Provision F.25 (d) of Waste Discharge Requirements Order No. R1-2001-##*. Test specie(s) shall be approved by the Executive Officer. Two test species may be required if test data indicate that there is alternating sensitivity between the two species.

   c. Frequency:

Routine Monitoring:	Twice per year
Accelerated Monitoring:	Quarterly, or as otherwise specified by the Executive Officer.

   d. Conditions for Accelerated Monitoring: The permittee shall conduct accelerated monitoring when either of the following conditions are exceeded:

      (1) Three-sample median value of 1 TUc, or
      (2) Single-sample maximum value of 2 TUc.

   e. Methodology: Sample collection, handling and preservation shall be in accordance with EPA protocols. The test methodology used shall be in accordance with the references cited in this Permit, or as approved by the Executive Officer. A concurrent reference toxicant test shall be performed for each test.

f. Dilution Series: The permittee shall conduct tests of effluent at 100 percent, 85 percent, 70 percent, 50 percent, and 25 percent of its initial strength. Dilution and control waters shall be obtained from an area unaffected by the discharge in the receiving waters. Standard dilution water may be used if the above sources exhibit toxicity or if approved by the Executive Officer.

2. Chronic Toxicity Reporting Requirements

a. Routine Reporting: Toxicity test results for the current reporting period shall include, at a minimum, for each test:

i. sample date(s)
ii. test initiation date
iii. test species
iv. end point values for each dilution (e.g. number of young, growth rate, percent survival)
v. NOEC value(s) in percent effluent
vi. IC_{15}, IC_{25}, IC_{40}, and IC_{50} values (or EC_{15}, EC_{25} ... etc.) in percent effluent
vii. TUc values (100/NOEC, 100/IC_{25}, and 100/EC_{25})
viii. Mean percent mortality (±s.d.) after 96 hours in 100 percent effluent (if applicable)
ix. NOEC and LOEC values for reference toxicant test(s)
x. IC_{50} or EC_{50} value(s) for reference toxicant test(s)
xi. Available water quality measurements for each test (ex. pH, D.O., temperature, conductivity, hardness, salinity, ammonia)

b. Compliance Summary: The results of the chronic toxicity testing shall be provided in the most recent self-monitoring report and shall include a summary table of chronic toxicity data from at least eleven of the most recent samples. The information in the table shall include the items listed above under 2.a., item numbers 1, 3, 5, 6 (IC_{25} or EC_{25}), 7, and 8.

After at least four test rounds, the permittee may request the Executive Officer to decrease the required frequency of testing, and/or to reduce the number of compliance species to one. Such a request may be made only if toxicity exceeding the TUc values specified in the effluent limitations was never observed using that test specie.

REPORTING FOR WASTEWATER, RECEIVING WATER, ACUTE TOXICITY, and CHRONIC TOXICITY MONITORING

Monitoring reports shall be submitted to the Regional Water Board monthly. If holiday work schedules prevent sample collection on the date specified by this monitoring program, a substitute sample shall be collected and an explanation of the circumstances shall be included with the self-monitoring report. Monthly monitoring reports are due in the Regional Water Board office by the first day of the second month following sampling.

DETERMINATION OF PRIORITY POLLUTANTS REQUIRING WATER QUALITY-BASED EFFLUENT LIMITATIONS

The Regional Water Board shall conduct the analysis according to the California Toxics Rule (CTR) for each priority pollutant to determine if a water quality-based effluent limitation is required in the permittee's permit. It is the permittee's responsibility to provide all information requested by the Regional Water Board for use in the analysis. The Regional Water Board shall use all available, valid, relevant, representative information to determine whether a discharge may: (1) cause, (2) have a reasonable potential to cause, or (3) contribute to an excursion above any applicable priority pollutant criterion or objective.

Effluent Monitoring for Priority Pollutants

The effluent (SN 001) shall be analyzed for the concentration of each priority pollutant listed in Attachment 'B' [Priority Pollutants] and shall be done in accordance with Special Provision E.1 of Waste Discharge Requirements Order No. R1-20001-##*. The permittee shall take a minimum of four effluent samples. Two samples shall be taken during the wet weather and two during the dry weather when the effluent flow is not influenced by a rain event and when there is a discharge to the Eel River.

Receiving Water Monitoring for Ambient Background Concentrations of Priority Pollutants

The receiving water shall be analyzed for the ambient background concentration of each priority pollutant listed in Attachment 'B' and shall be done in accordance with Special Provision E.2 of this Order. The permittee shall take at least two ambient background receiving water samples. One sample shall be taken during the wet weather and one during the dry weather when the effluent flow is not influenced by a rain event and when there is a discharge to the Eel River. The samples shall be taken from an upstream location out of the influence of the discharge. In addition, the following data shall be collected from the receiving water at the time of each sampling event:

a. flow rate;
b. pH;
c. hardness; and
d. salinity.

Effluent Monitoring for 2,3,7,8-Tetrachlorodibenzo-p-dioxin (2,3,7,8-TCDD) Congeners

The permittee shall monitor its effluent (SN 001) for the presence of the seventeen 2,3,7,8-tetrachlorodibenzo-p-dioxin (2,3,7,8-TCDD) congeners listed in Attachment 'D' [Report Format for Effluent Dioxin Study], once during the dry weather and once during the wet weather each year for a period of three consecutive years. This shall be done in accordance with Special Provision E.3 of this Order.

U.S. EPA Test Method 1613 for dioxins and furans shall be used in the analysis. The permittee shall report as shown in Attachment 'D' for each congener the analytical results of the effluent monitoring, including the quantifiable limit [1] and the Method Detection Limit (MDL), and the measured or estimated concentration. In addition, the permittee shall multiply each measured or estimated congener concentration by its respective Toxic Equivalent Factor (TEF) (see Attachment 'D') value and report the sum of these values.

Monitoring Requirements

Laboratories analyzing monitoring samples shall be certified by the Department of Health Services, in accordance with the provisions of California Water Code Section 13176, and must include quality assurance/quality control data with their reports.

Options for analytical methods are:

(1) those methods listed in Attachments 'B' and 'D' and described in tables 1A, 1B, 1C, 1D, and 1E of 40 CFR 136.3 (revised as of May 14, 1999); or alternate test procedures for individual discharges that have been approved by the U.S. EPA Regional Administrator pursuant to 40 CFR 136.4 (a) through (c), inclusive, and 40 CFR 136.5 (a) through (d), inclusive (revised as of May 14, 1999); or

(2) where no methods are specified for a pollutant in the tables described in (1) above, methods approved by the State Water Board or Regional Water Board.

Reporting Requirements

The information collected during the Effluent Monitoring for Priority Pollutants (EMPP), Receiving Water Monitoring for Ambient Background Concentrations of Priority Pollutants (RWMPP), and Effluent Monitoring for 2,3,7,8-Tetrachlorodibenzo-p-dioxin (2,3,7,8-TCDD) Congeners (EMD) shall be reported as shown in Attachments 'C' [Report Format for Priority Toxic Pollutants] and Attachment 'D' [Report Format for Effluent Dioxin Study] respectively. The reports shall contain the following information:

a. Name of the permittee
b. WDID number
c. Contact name and phone number
d. Name of Laboratory
e. ELAP (Environmental Laboratory Accreditation Program) number
f. Laboratory contact name and phone number
g. Report number
h. Type of sample (effluent vs. receiving water) [for EMPP & RWMPP ONLY]
i. Water body [for RWMPP ONLY]
j. Sample Location [for RWMPP ONLY]
k. Name of the constituent
l. Date sample collected

[1] U.S. EPA-approved test method 1613 for dioxins and furans quantification practice is not consistent with the definition of a Minimum Level (ML). However, the lowest quantifiable limit will substitute for the ML for reporting and compliance determination purposes.

m. Sample collection method
n. Date sample analyzed
o. USEPA analytical method used
p. Analytical results
q. Minimum Level (ML)[2]
r. Method Detection Limit (MDL)[3]
s. Reported Detection Level (RDL)[4] [for EMPP & RWMPP ONLY]
t. Measured or estimated congener concentration [for EMD ONLY]
u. The value of the measured or estimated congener concentration multiplied by its respective TEF value [for EMD ONLY]
v. The sum of the measured or estimated congener concentration multiplied by their respective TEF values [for EMD ONLY]
w. Period (Wet or Dry) [for EMD ONLY]

The permittee shall report the results of analytical determination for the presence of chemical constituents in a sample using the following protocols:

1. Sample results greater than or equal to the reported ML shall be reported as measured by the laboratory (i.e., the measured concentration in the sample).

2. Sample results less than the reported ML, but greater than or equal to the laboratory's [Method Detection Level (MDL), shall be reported as "Detected, but Not Quantified," or DNQ. The estimated chemical concentration of the sample also shall be reported.

   For the purposes of data collection, the laboratory shall write the estimated chemical concentration next to DNQ as well as the words "Estimated Concentration" (may be shortened to "Est. Conc."). The laboratory may, if such information is available, include numerical estimates of the data quality for the reported result. Numerical estimates of data quality may be percent accuracy (+/- a percentage of the reported value), numerical ranges (low to high), or any other means considered appropriate by the laboratory.

3. Sample results less than the laboratory's MDL shall be reported as "Not Detected," or ND.

Permittees shall instruct laboratories to establish calibration standards so that the (ML) value (or its equivalent if there is different treatment of samples relative to calibration standards) is the lowest calibration standard. At no time shall the permittee use analytical data derived from *extrapolation* beyond the lowest point of the calibration curve.

REPORTING FOR PRIORITY POLLUTANTS MONITORING

[2] ML is the concentration at which the entire analytical system must give a recognizable signal and acceptable calibration point. The ML is the concentration in a sample that is equivalent to the concentration of the lowest calibration standard analyzed by a specific analytical procedure, assuming that all method specified sample weights, volumes, and processing steps have been followed.

[3] MDL is the minimum concentration of a substance that can be measured and reported with 99 percent confidence that the analyte concentration is greater than zero, as defined in 40 CFR 136, Appendix B, revised as of May 14, 1999.

[4] RDL is the detection level that results from the actual sampling event, which is reported on the monitoring report. The RDL may be higher than the MDL for the sampling technique being used due to the presence of detection interference's in the sample.

Within 14 days of each scheduled sampling event, notify the Regional Water Board in writing as to whether the sampling event has occurred. Any deviation from the sampling plan should be explained in the final report.

The final report for the Effluent Monitoring for 2,3,7,8-Tetrachlorodibenzo-p-dioxin (2,3,7,8-TCDD) Congeners shall be submitted to the Regional Water Board no later than **three years from the date of this Order**.

The final report for Effluent Monitoring for Priority Pollutants and Receiving Water Monitoring for Ambient Background Concentrations of Priority Pollutants shall be submitted to the Regional Water Board no later than **April 1, 2003**.

Ordered by _____
Lee A. Michlin
Executive Officer

April 26, 2001

* number will be assigned after adopted

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